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The effect of different methionine levels in the diet during the early ages of Japanese quails on performance, carcass characteristics, protein and energy efficiency ratios and breast muscle composition

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Abstract

This experiment was investigate the effects of different methionine levels on performance, carcass characteristics and breast muscle composition of Japanese quails. Four hundred and ninety quail chicks were used based a completely randomized design of using 7 treatments and 5 replicates each (14 birds per replicate) for a 10-day period. The treatments were the NRC recommendation level for methionine (0.5%), three levels of 7.5, 15 and 22.5 % lower than NRC recommendation (0.3875, 0.425 amd 0.4625% respectively) and three levels of 7.5, 15 and 22.5 % higher than NRC recommendation (0.5375, 0.575 and 0.6125% respectively). The results showed that increasing the methionine level to to 15% higher than NRC (0.575%) linearly decreased the FCR, but increasing it to 22.5% (0.6125%) did not changed it. The broken line regression equations showed the highest carcass and breast proportional weights for the quails fed the 0.575% methionine. By increasing the methionine level up to 0.575%, both the protein (PER) and energy efficiency ratios (EER) were linearly increased but increase the methionine level to 0.6125% did not changed the PER and EER. Moreover, the highest PER and EER were obtained by 0.575% methione. Furthermore, increasing the methione level up to 0.575% linearly increased the breast protein content and the highest breast protein content was obtained by the both levels of 0.575 and 0.6125% of methionine. Consumption of 0.575% methionine during the early ages improves the PER and EER and hence causes the higher protein retention, higher carcass protein and carcass weights and decreased FCR.

Keywords: Japanese quail, Feed conversion ratio, Energy effficincy, Protein efficiency, Methionine

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